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EARLY IDENTIFICATION AND MITIGATION OF LEARNING PROBLEMS, ANNUAL SYMPOSIUM (3RD, NEW BRUNSWICK, NEW JERSEY, MAY 19, 1967).

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TWO SPEECHES PRESENTED AT THE THIRD ANNUAL SYMPOSIUM HELD BY RUTGERS STATE UNIVERSITY IN 1967 CONSIDER LEARNING DISABILITIES. IN "NEUROPHRENIC CHILDREN--THEIR EARLY IDENTIFICATION AND MANAGEMENT," EDGAR A. DOLL EXPLAINS HIS CONCEPT OF NEUROPHRENIA AND THE IMPORTANCE OF EARLY IDENTIFICATION AND DISCUSSES THE USE OF THE VINELAND SOCIAL MATURITY SCALE AND PRE-SCHOOL AND ATTAINMENT RECORD IN CLINICAL ASSESSMENT. GUIDELINES FOR THE GROWTH AND DEVELOPMENT OF THESE CHILDREN ARE OUTLINED, A CASE STUDY OF A NEUROPHRENIC CHILD IS PRESENTED, AND 20 REFERENCES ARE LISTED. IN THE SECOND SPEECH ON "LEARNING DISORDERS AND THE PRESCHOOL CHILD," SYLVIA O. RICHARDSON DISCUSSES IDENTIFYING CHARACTERISTICS AND MEDICAL HISTORIES USUALLY FOUND AMONG CHILDREN WITH LEARNING DISABILITIES. EMPHASIS IS PLACED UPON EARLY IDENTIFICATION (AT 5 YEARS OR YOUNGER) AND APPROPRIATE EDUCATIONAL METHODS RECOGNIZING INDIVIDUAL DIFFERENCES. AN UNPUBLISHED STUDY IS REVIEWED IN SUPPORT OF THE THEORY THAT BEHAVIORAL DESCRIPTIONS OF IMMATURITY ARE REPRESENTATIVE OF OBJECTIVE MEASURABLE DIFFERENCES ALONG VARIOUS DIMENSIONS (PHYSICAL, SOCIAL, EMOTIONAL). (RS)

ED 020602

SYMPOSIUM
1967

EARLY IDENTIFICATION
and MITIGATION
of LEARNING PROBLEMS

SPEAKERS

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EC 001 940
ERIC

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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EARLY IDENTIFICATION
and MITIGATION
of LEARNING PROBLEMS

THE GYMNASIUM
Rutgers, The State University
New Brunswick, New Jersey

FRIDAY, MAY 19th

Our third annual SYMPOSIUM was concerned with children who have good potential but have difficulty learning academic skills by traditional methods.

EARLY IDENTIFICATION
and MITIGATION
of LEARNING PROBLEMS

DR. JACK I. BARDON, Moderator

Dept. of Educational Psychology
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Dr. Doll explained his concept of neurophrenia. The Preschool Attainment Record as an instrument for global evaluation of personal-social-intellectual adequacy encompassing the ages from six months to seven years was discussed.

Dr. Richardson spoke about the early risk signs in potential learning problems. She emphasized the need to identify the weak areas and appreciate the strengths in children in order to establish individualized guidelines for teaching.

Neurophrenic Children
Their Early Identification and Management

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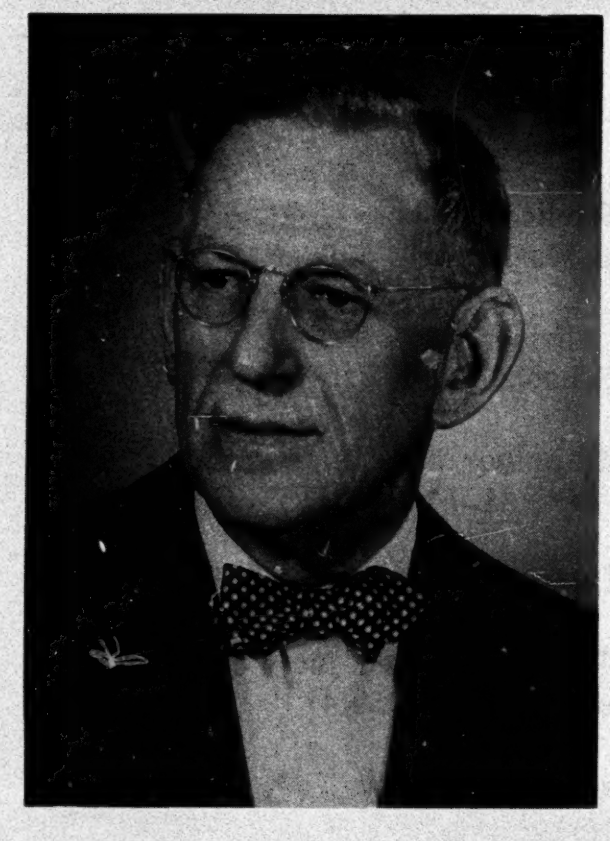

DR. EDGAR A. DOLL
Psychologist

NEUROPHRENIC CHILDREN:

Their Early Identification and Management*

by

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I

The production and rearing of children is fraught with many hazards, but life goes on. We seem to take it for granted that the newborn child will be without blemish, yet the mother's hidden fears to the contrary are witnessed in the early question "Is he all right?" Most children are, indeed, "all right" and survive their life histories without significant disabilities. Others, however, are impaired at the time of birth or at some later date as they grow to maturity.

The mother typically assumes responsibility for having her child well-born. If this expectation is denied, the mother is inclined to feel that it is somehow her fault. She then searches for reasons and if these are not forthcoming, she is likely to feel that she has incurred a "judgment" or a punishment for having somehow sinned. This point of view is reflected in John 9: 1-3:

And as he passed by, he saw a man blind from his birth. And his disciples asked him saying,

"Rabbi, who sinned, this man or his parents,
that he should be born blind?"

Jesus answered, "Neither did this man sin nor his parents; but that the works of God should be made manifest in him."

We are, indeed, somewhat conceited to think that we have control over the abnormalities of new-born children. We still know too little about the various causes of disabilities to be able to assign responsibility for them to the child's parents, even though the mother is an obvious and often willing scapegoat. If we take

*Address prepared for Symposium 1967, Rutgers University, New Brunswick, May 19, 1967.

the last words of John,

"that the works of God should be made manifest in him",

we can, with or without religious commitment, recognize the inevitabilities and the mysteries of what some may prefer to call Nature. All children are God's gifts, or Nature's if you so prefer, and are equally acceptable in His or in her sight. Why then should they not be equally acceptable in our vision; and have we not accepted that responsibility when the child's birth was hoped for? Each child brings many gifts to his parents. But if impaired, some parents do not resolve the meaning of the handicapped child in the family circle. They should read the recent book by Pearl Buck and Gweneth Zarfoss entitled "The Gifts They Bring" (1) with implications for children beyond the sub-title "Our Debt to the Mentally Retarded".

When these gifts are the children themselves it is our unhappy practice too often to examine the package too critically. We know that individual differences is one law of Nature and that the differences are not of the same degree for all attributes, and that some are assets and some are deficits. For "One could whistle, and one could sing, and the other could play the violin". We know also that some of these differences are out-grown or overcome, or minimized with growth and development. We know still further that some of the children who are born without blemish may subsequently acquire deficits as they mature to manhood. Indeed, the disabilities which may have been escaped at birth may well be acquired late in life as witnessed by observation in any home for the aging. To quote from Walter de la Mare: "When we are arrived at this last stage, if we stay any long time in it, and pay not the debt we owe, death requires interest; she takes his hearing from one, his sight from another and from some she takes both".

II

We are gathered this afternoon to exchange ideas about children with learning disabilities. But our concern is not so specific as this implies, for all children have learning disabilities of greater or less degree and of various kinds. Some of these are due to impairments of sight or hearing. And some are due to orthopedic, emotional, neurological, and still other causes. Among all these kinds of troubled learning, I am assuming that those

children who have been termed "neurophrenic" challenge our most immediate interest. These are children with fairly well described learning and behavior difficulties which are not yet clearly understood as to their precise causes or their most appropriate modes of management.

The characteristics of these children have received widespread attention over the past quarter century under such titles as brain crippled, brain injured, brain damaged and more recently minimal cerebral dysfunction (2). This is because the nature of the behavior and learning difficulties implies a likelihood of CNS pathology. We are confused when we undertake to specify the site of the damage as other than diffuse or unlocalized or simply intracranial. We are also confused as to whether the impairment is one of structure, metabolism, or function. We are not altogether clear as to the specific etiology of the implied neuropathology. This portion of our discussion will be presented by Dr. Richardson; my assignment is to discuss the behavior and learning problems.

Our present interest in this field began to expand about 1930, with new interest in birth injuries and cerebral palsy reviving the antecedent interest which is less clearly pin-pointed. It is unnecessary here to recite the names of the early investigators or the titles or substance of their reports. What is important is to distinguish the behavior indications and to recognize that in most instances the organic antecedents are established with difficulty, if at all. Here is a situation where the specialist had best proceed cautiously and say, "I find nothing wrong" rather than "there is nothing wrong", or "I find these influences present but cannot guarantee their origins".

The term Neurophrenia was first proposed in 1950 following discussion within the American Academy for Cerebral Palsy (8). Attention was called (4) to such puzzling features as contradictory performances, frozen assets, resemblances to such standard categories as mental retardation, cerebral palsy and schizophrenia, differences in structured vs. unstructured situations, and between spontaneous vs. demand behavior. These features were summarized in 18 behavior items as follows:

"Neurophrenia is conceived as a behavior symptom-complex which incorporates in greater or less extent and degree nearly all the detailed symptomatology of brain injury. It is the

characteristic pattern of these disabilities that seems to afford a behavior syndrome which is significant for purposes of disposition and regimen. These symptoms may be indicated categorically as follows:

"1. Behavior is "organically driven" with manifestations of hyperactivity, irrelevance, and anxiety. The overtones are those of apparent neurotic perseveration. A particular feature is the disparity between structured versus unstructured performances. The spontaneously initiated behavior reflects the higher level, better integration, rational direction, suitable relevance, and minimal conflict overtones. In contrast, attempts at structuring or controlling the behavior destroy these purposefully organized activities and produce low level, irrational, anxious, neurotic indications. It is as if the behavior pattern is atomized (disintegrated) by attempts to improve it.

"2. Posture and movement reveal awkwardness rather than orthopedic handicap. This lack of kinetic facility is not immediately apparent, but skilled observation readily discerns a lack of precision in manipulation and movement. Neuromuscular embarrassments are readily detected in offhand tests of heel-to-toe walking, or balancing on one foot. They may be referred for more precise orthopedic examination or may be left at the level of observation. Performance tests such as the Heath rails, the Oseretsky and Van der Lugt scales, may be used for quantification.

"3. Intellectual functioning typically reveals marked retardation or disharmony. This is apparent in both verbal and non-verbal test situations as well as in abstract versus concrete performances. Yet the observations suggest interferences to expression rather than essential mental deficiency. The impairments are related to other behavior symptoms as enumerated below.

"4. Language is developmentally retarded, sometimes amounting to developmental aphasia, and shows both tonal and propositional weakness, as well as poor syntactical formulation and dearth of vocabulary.

"5. Speech is impaired in articulation, tonal quality, and inflection.

"6. Visual perception is disturbed, although visual acuity appears generally intact. The ocular-motor aspects of perception

are presumably involved as are also visual-motor translation.

"7. Auditory perception is likewise impaired. Severe hearing loss is usually suspected but is typically a functional consequence of other psychological disturbances. When these disturbances are controlled, auditory acuity appears to be relatively intact except perhaps for weakness of pitch discrimination or tonal perception with obscurity of meaning. This suggests a sensory component for the developmental language deficiency.

"8. Rhythm appears to be disturbed but has not yet been adequately appraised for clear symptomatology.

"9. Laterality disturbances are common, with high incidence of left-sided laterality but also many confusions, so that the term "sidedness" is to be preferred to "handedness." One must also consider the nature of laterality fixation in terms of its etiology.

"10. Attention is distractible, yet may also be highly perseverative. This confuses the behavior picture, especially with reference to structured versus unstructured interpretations, the child attending well spontaneously, yet poorly under efforts at control.

"11. Emotionally the behavior is variously autistic, aggressive, destructive, or disturbed. Apathy, resistance and withdrawal, alternate with hyperactivity, aggression, and anxiety.

"12. Conduct is dynamically unpredictable, alternating between relatively infantile and mature manifestions. Intermittency is a common characteristic and affects nearly all behavior details. The current of behavior is accordingly "phasic." This is apparent in alternations of rapport and inaccessibility, and oscillation from affectionate acceptance to negativistic withdrawal.

"13. Learning reflects these overall behavior disturbances in variable permutations. This applies to nearly all forms of learning whether in the area of self-help, social relatedness, scholastic endeavor, or occupational pursuits. These phases of behavior reflect the contradictory and unstable qualities of the personality as a whole.

"14. Social competence is subnormal for both age level and measured intelligence, but "flashes" of adequacy disturb the evaluation by hinting at "frozen assets."

"15. Concept formation is restricted and seems best developed

through repetition of experience and instruction. Precept and example are not clearly differentiated nor readily assimilated.

"16. Retention is intermittent, variable, uncertain; ritualized performances perseverate; memory appears as "identification"; recall efforts are groping; rote exercise substitutes for understanding.

"17. Effort seems whimsical and willful, with tasks egocentrically pursued, or eccentrically abandoned as if the initial telos had vanished. Purposive action is thus seen as compulsively continued, irrelevantly varied, or unaccountably interrupted, depersonalized, or pseudoschizoid.

"18. The integrity of behavior is therefore not well established for any particular sphere of performance for total adaptation. Its ambivalent qualities are confusion and bewilderment, perhaps best conceived as lacking in focus".

III

In the identification and management of neurophrenia two opposing points of view influence the outcomes. Since the behavior indications are so baffling, most methods of dealing with them result in frustration. This leads to a "spoiled brat" concept to be dealt with by punishment and suppression. We live in a moralistic world where behavior is presumed to represent the expression of free will. Misconduct or noncomformity are generally assumed to result from deliberate willfulness. Hence, punishments and character training are employed. But the behavior of the neurophrenic child usually is not controlled nor even much improved by these approaches. If we retain our forebearance and objectivity, not to say our own self-control, we soon observe evidences of organically driven behavior which is aggravated by hypersensitivity, feeble capacity for inhibition, and a certain compulsive desperateness that ultimately call for our sympathetic assistance rather than our righteous indignation.

This leads to the organic concept of a psychoneurological orientation. The terms employed reflect our compromises with these two standpoints. "Neurophrenia" emphasizes the behavior picture but recognizes the presumptive organic antecedents. "Psychoneurological learning disabilities" serves the same purpose but is somewhat more awkward and also less specific with respect to the behavior as conduct. The term "brain-

injured", generally credited to Strauss, gives often unverified emphasis on the origins as compared with the symptoms. It is also a frightening term to parents as well as one which is etymologically limited. This is not resolved by referring to the "Strauss syndrome" which is incomplete and non-specific. Nor does the more recent term "minimal brain dysfunction" leave everyone satisfied.

Strother (19) has indicated that "from an educational point of view, the objective—is not to determine whether (the child) is brain-injured but to lay a foundation for the planning of an educational program". Yet the recognition of a CNS component is one essential to such planning.

Accurate terminology is one objective of scientific differentation. This is particularly relevant to the condition we are here concerned with because of the overlap of categories which this condition simulates, namely, mental retardation, juvenile schizophrenia, autism, mild cerebral palsy, deafness, aphasia, and other. Marginal symptoms commonly attributed to such categories are usually present in neurophrenia and lead to such professional confusion that we say, "when the doctors disagree their dissension is one additional criterion of the diagnosis".

We agree with Strother that our usual interest in identifying children as neurophrenic is in order to explain their otherwise bewildering behavior and uncertain learning. It also enables us to plan for mitigating management. We can thus accomplish effective amelioration of present undesirabilities and prevent the onset of others that seem prognostically imminent. What are such mitigating programs and how are they established?

Our first consideration is to establish adequate indentification, which is: (1) dated as to time of onset, (2) reviewed as to complete obstetrical, perinatal, and postnatal histories, (3) verified by pediatric-neurological consideration, and (4) well inventoried as to behavior and learning propensities. Comprehensive social, educational, and psychological evaluation should produce further inventories of abilities and disabilities with particular emphases on hidden potentials vs. overt performances, leading to specific management of the child as a whole who lives in a home, with his family, probably attends school, and may or should share in the life of his community.

There are many excellent and detailed accounts of how to

accomplish these preliminaries. One succinct overview is by Charles R. Strother, and is available from the Easter Seal Society (19). More detailed expositions of recent date are in the Special Child Publications edited by Jerome Hellmuth and are available from the Seguin School, Seattle (13, 14, 15, 16). The excellent chapters of these Publications are a vade mecum for our needs.

IV

In the clinical assessment of children, three methods of evaluation are commonly employed, namely, observation, records and reports, and formal direct examination. With the advent of the formal examination procedures, the techniques of observation and report have fallen into disuse. Yet the obstacles to satisfactory examination in the case of neurophrenic children, such as their sensory limitations, their dynamic disturbances, limited capabilities for concentrated attention, poor social rapport, require that observation and report be employed for support if not, indeed, as preliminaries to valid examination. Moreover, the logic of psychometry requires that all avenues of reception and expression be unimpeded. The examiner is, therefore, logically required to evaluate all these avenues, including language and experience, before proceding with the examination. If the child will not cooperate, or if he has perceptual, motor, language, or other defects, then the formal examination is stymied.

Such devices as the Vineland Social Maturity Scale (7) and the Pre-school Attainment Record (10) help to resolve these difficulties. These two devices provide a fairly precise evaluation of a child as a whole and his achievements, from which his learning and behavior potentials may be inferred.

The Vineland Social Maturity Scale provides for such evaluation from birth to adulthood. It has a well-established reputation in use over the past 30 years. The Preschool Attainment Record has just been published. It expands the Vineland Scale for the preschool years and systematizes the direct examination with reference to the child as a person. This is an instrument for global evaluation, whereas the formal examination needs to be selectively particularized as the evaluation proceeds.

This Preschool Attainment Record is formulated in eight categories of behavior, namely; Ambulation, Manipulation, Rapport, Communication, Responsibility, Information, Ideation,

and Creativity. For each of these categories there is one item of progression for each six-month period from birth to 84 months. For example, the progression in ambulation proceeds from "sits" to "stands" to "walks" to "runs" to "climbs" to "jumps", and so on. Similarly in communication the items proceed from "babbling" to "vocalizing", to "imitating", to "speaking" in words, phrases, sentences, paragraphs.

In this way the Scale encompasses 112 behavior items. The record is obtained by standardized interview with someone well informed regarding the child's attainments, usually the mother. The items are scored as passed, not passed, or intermediate. The items passed are added up for a total score and this is translated in terms of age. The record also shows the irregularities of attainment from category to category and within categories. The record establishes points of reference for explanation, for pursuing further attainments (with a built-in schedule or curriculum of child development) with implications for the lines along which the management program might most profitably be pursued.

What is especially important in the use of such an instrument is that the child's resistances and disabilities in relation to the direct formal examination should not conceal his actual attainments and potentials nor confuse his habitual vs. his unstable performances. It also permits inquiry regarding certain forms of behavior, such as taking a bath or feeding himself, which are not very readily subject to formal examination in the laboratory. Evaluation of the results permits interpretations by age, by sex, by social, economic, and cultural status, by specific disabilities, and so on. This scale has further advantage of not requiring the presence of the child for examination, which sometimes is impracticable because of the child's hyperactivity or other attributes. But if it is feasible for the child to be present, then the Scale affords a developmental schedule as an outline for observation and testing.

These scales are useful for determining the present degrees and directions of personal-social adequacy. But they can also be used for retrospective measurement which is an advantage not present in most direct examining procedures. There is also a technique of double scoring for ascertaining the impact of specific impediments to successful performances. In this way we can fill

in the life history review with more specific and more precise data.

To illustrate this life-history method of appraisal and identification and also to include information on developmental management the following case history is offered.

PSYCHOLOGICAL SUMMARY

This boy was referred by his third grade teacher and building principal because of classroom disturbance and learning disorders. He was 8 years 10 months of age and had entered school at age 6.3 years. His behavior was described as continuous talking, restlessness, moving about, disturbing other children. There was a long teacher diary of learning difficulties and non-conforming conduct. Both teacher and principal seemed moderately prejudiced against him because of these difficulties and also because of their difficulty in understanding and dealing with him. The school was an excellent grade school in a rural neighborhood.

On the playground Jim seemed not very purposely related to the other children. But it was said that the other children came to him for assistance and advice, a characteristic which was true also with his siblings. He looked healthy and alert with quick responses and ready comprehension. He was quickly responsive to distracting movements and seemed annoyed by loud noises. His desk was at the rear of the room in a corner, selected by himself with the teacher's approval. He seemed to generally ignore his teacher, was not refractory nor willful. His behavior suggested the restless, hyperactively driven type of conduct so frequently seen among neurophrenics and so often mistaken for emotional disturbance.

His school work was marginal in quality but above average for his age, with poor handwriting and haphazard paper work. The teacher reported that Jim made deliberate mistakes, but close examination of his papers suggested a degree of care with many erasures and an absence of neatness revealing generally poor organization and erratic work habits. He had particular difficulty in spelling and made numerous errors in simple arithmetic.

Jastak Wide Range Achievement testing yielded reading score at low 6th grade, 97 percentile; spelling at high 4th grade, percentile 84; arithmetic low fifth grade, percentile 88. On the

JNB Time Test his score was equivalent to 12 years for 10-years old, he being barely 9 years. His Frostig examination scores were all at 10 years except Form Constancy which was at 9 years. On Myklebust Picture Story written language test his scores were: stanine 4, 25-percentile for his age, for abstract concrete material; stanine 5, 40-percentile, for total words; stanine 6, 75-percentile, for words per sentence; stanine 7, 75-percentile, for syntax; stanine 8, 85-percentile for total sentences.

His behavior grades for school rapport were principally at rank 2. His score on the Pintner-Toops Direction Test was 13 out of 15 items or a grade score of about 6 to 8.

Wechsler Intelligence Test for Children yielded verbal quotient 120, non-verbal 135, full quotient 130. There were no significant patterns other than the discrepancy between verbal and non-verbal scores except that his answers were quite specific and earned no credit at the level of generalization. He showed excellent social relatedness when cooperating with rapid comprehension and ready response. Conversational aptitude was unimpaired.

Other test scores showed Trabue Completion at 5th to 6th grade; Shipley-Hartford Abstraction age 13, quotient 145; John Buck H-T-P- drawings meagerly elaborated and poorly drawn with general impression of visual perception and motor execution below other aptitudes; Morgan's Mental Test gave M.A. 10.7, quotient 120, school grade 5; CAT, 1966 was reported at 4th to 5th grade; Pintner-Cunningham, 1964, reported IQ 116.

Progressive Matrices score was at 95-percentile for 9-year-olds, or an age score of 11- years. Bender-Gestalt was poorly executed with marked visual motor weakness. Handwriting was manuscript print. ITPA yielded scores of 8.5 to 9 years except for visual-motor which was 8 years; six of these 9 scores were above ceiling.

The Wepman Auditory Perception test yielded nothing noteworthy, the primary difficulty being in the visual-motor sphere. Vocabulary was of good range.

The family structure reveals the father as a template designer, or tool maker, at Boeing Aircraft. He is abut 35 years of age, has been in good health, is of pleasant disposition with no apparent disabilities. He achieved high school education, has been successfully employed, is absent from home except for weekends.

He is on the whole rather severe with Jim in respect to his conduct. The family are affiliated with the Jehovah's Witnesses and this has numerous social ramifications at school and in the community for the children.

The mother is a well-built woman of 33 years of age of high school education who has a history of numerous illnesses. Her reproductive history is generally clear as obtained. There have been many untoward health incidents in the home.

The parents were separated for a period of one year four years ago but have reconciled their differences and the family situation is now harmonious and well-knit with marked family loyalties.

There are three children. The oldest is a boy of 13 years in the 7th grade, in excellent health, with a good record of learning and behavior. A sister, age 11 years, is in the 5th grade. She has the learning and behavior symptoms characteristic of neurophrenia, being very much like Jim, but not referred for evaluation at school. Jim is the last of three pregnancies. He has a confused history of numerous illnesses, accidents, and untoward incidents. The prenatal history as obtained is uneventful. The birth weight was 6 pounds 9 ounces (compared with 7 pounds 4 ounces and 7 pounds 2 ounces for the other children). The mother had fallen briefly before the onset of labor, but this incident is not clearly related. Instruments were used for full-term delivery following version. The birth was a breech presentation. There is no report of neonatal anoxia or of any other untoward events of delivery. He is described as having a club-foot for which he wore a night brace for three months at 3 months of age. There is no history of seizures.

When Jim was 6 months old his sister incurred mumps encephalitis which Jim subsequently contracted, as did his mother. He held his head up at birth but did not sit up until 8 months but was walking at 12 months. Most of this information was verified by the mother from her baby book.

Retrospective use of the Vineland Social Maturity Scale yielded a social age quotient of 160 at 3.0 years of age; 120 at 6.3 years of age and 130 currently at approximately 9 years of age. Retrospective use of the Preschool Attainment Record yielded quotient score of 145 at 2 years and 142 at 4 years.

Recommendations for management are of the order of continuing in the regular school classroom but with an adjusted schedule balancing his degree of intelligence against the

difficulties of particular learning tasks, (e.g., inequalities of spelling and arithmetic with reading), varying his daily schedule to provide for both the control and the exercise of distractibility, liberal use of non-academic activities, maximum participation in social events of the classroom and school. Program to be pressure free, moderately permissive, but firm and responsible.

This boy illustrates the rather bewildering problems of understanding his behavior and learning in the face of his better than average intelligence which of course, does indeed assist him in coping with the difficulties but does not enable him to overcome them. Since this evaluation began we have seen positive consequences as a result of the evaluation itself in improved understanding and more tolerance on the part of all concerned, namely, his teacher and principal, his school peers, his siblings, his parents. No special concessions are being made to his peculiarities other than accomodation to them on a reasonable basis. Counselling has been extended to him, his teacher and principal, his parents, and through them his siblings and peers.

V

Having identified our special child, and having inventoried his talents and peculiarities, we have taken a long step toward enlightened management designed to mitigate his learning and behavior difficulties and to promote maximum capitalization of his assets. Four major resources are available for specific programs.

1. Our first resource is home care. Typically the neurophrenic child is a family problem from early infancy to maturity. This will depend on family size, position in the family, age, age and sex of siblings, presence of relatives in the household, living space, habits and so on. Domestic harmony will be a paramount factor. Cultural and economic influences need consideration as well as the health and personalities of all family members. Family counseling, including the siblings, is essential. If the child is a first-born, the mother will probably be both more or less aware of the neurophrenic child's differences. His relatedness may be negative, his learning unstable, his conduct uncontrollable. The family, especially the mother but not ignoring the father, needs help in understanding the child and accepting his presence and needs. And so do the siblings. Patience and forebearance are

prime assets which quickly reach short supply. Yet the home regimen will set the stage for schooling and for behavior conditioning. Where to turn for help, since many naturally sought counsellors (other parents, grandparents, physicians, social workers, even (!) psychologists) are likely to be minimally informed.

2. As direct support the home may establish continuing consultation with the family physician and medical specialists familiar with these problems. If the family physician is a general practitioner, he will presumably refer the neurophrenic patien to a pediatrician who may be more intimately acquainted with this condition and its medical treatment and social management. This presumably would include an all-out evaluation (diagnosis) of the child as patient and also as person, including physiological interpretations, possibilities for drug medication, surgery, diet, appliances (sensory and orthopedic, including perhaps sensory depressants where indicated) and the special regimens of rest, activity and training.

3. The time comes when classroom enrollment at school supports and relieves the home and serves as formal teaching agent. This relief may be brief or disastrous. Or it may prove to be one answer to earlier prayers. The outcome will depend on the adequacy of classroom placement, teacher awareness, imaginative sympathy and understanding (rather than petty conformity) curriculum flexibility, classroom activities and control, school acceptance by the building principal, other faculty members and by student peers. The school program, like the home regimen, should be non-rigid, pressure-free, success oriented, maturationally based. The "trade secrets" in this area are too many to catalogue here and are available in the Hellmuth chapters.

The classroom resources for the neurophrenic child are usually those of the public schools. The particular school may be tolerant or intolerant of him, accepting or rejecting, understanding or misunderstanding, conventional or adaptive. Assuming favorable attitudes, some neurophrenic children can be accomodated in regular classrooms on adjusted programs; others may be provided for in special classes. These may be homogeneous or heterogeneous as to pupil classification. They may be integrated or segregated administratively. The parent and

the school need to homogenize their knowledge of the child's needs as well as the school's resources. The school will be sensitive to parent pressure. The parent stance is that of the skilled golfer: "Keep your eye on the ball, follow through, but don't press". There is also good advice on the mayonnaise jar: "Keep cool, but don't freeze".

If public day-school classes are unavailable or unsuitable, recourse may be had to private day shools. Outstanding among these in the Philadepphia area is the Vanguard School specifically designed to serve interjacent children. This is a school for disturbed learners similar to those with neurophrenia. Likewise, the Pathway School has a favorable reputation in these environs. There are many others, but one needs to assess them individually. Some of them and their programs are described in Hellmuth's **Educational Therapy** (13). Others are to be found in directories such as Porter Sargent's "directory for Exceptional Children". *

4. A fourth resource is the residential school. This is for children whose management is not feasible at home or in a day-school, whether public or private. Sometimes the child's problems are such as to make a 24-hour program desirable or necessary as a feasible way of achieving consistency of total management. Sometimes the home is unsuitable or for any of many reasons may not be able to endure the strain. Sometimes home and day-school control need temporary change or relief. Perhaps some special learning activities or teaching skills need to be called for. Perhaps disruptions or stresses in the domestic scene make it intolerable to retain the special child at home for the time being.

A prime requisite in all these programs is the need for socialization training and experience. Learning to live amicably in society is one of our continuing objectives.

VI

With such an orientation we can now develop a number of principles, or a set of guidelines, designed to help us to cope more effectively with the life progress of neurophrenic children as they grow and mature from the onset of the condition to ultimate adulthood. We can formulate some life attainment goals and how

*Sargent, Porter. **Directory for Exceptional Children.** 5th. Ed. Boston, Mass.: Porter Sargent Publications, 1965.

they can be fostered, leaving for tomorrow the specific details of "how to do" as compared with "what to do". For the implementation of such programs depends too much on too many variables to permit 1-2-3 specification. Personnel, facilities, home and school surroundings, community relationships, unforeseen contingencies, individual differences, and many uncontrollable circumstances will require continuing modification and reorientation. Our own experience in this field reveals a vital need for continuing reviews of the child himself, his goals and his regimen even as any progressive routine calls for periodic re-evaluation.

For me the following goals and programs have proved useful:

1. **Belonging.** Assisting the child to establish a secure status in his social surroundings, family, friends, and community.

2. **Identifying.** The establishment of a clear-cut self-image and self-concept. Who am I? What am I? What am I doing here? What am I here for?

3. **Performing.** Promotion of satisfying self-expression. Structuring behavior and focussing activities for meaningful and gratifying ends.

4. **Knowing.** Consolidating the meanings of coordinated learning, cognition, insight, awareness, generalization, and abstraction.

5. **Discipline.** The promotion of effective self-management. Instruction in standards of conduct and acceptable behavior (conventionally oriented) in relation to and with concern for the welfare of others.

6. **Adjustment.** The realization of balance, or homeostasis. Success in coping with situations which cannot be modified but which require accommodation.

7. **Morality.** Inculcation of moral and ethical principles for behavior standards in a philosophy of personal-social integrity.

8. **Self confidence.** Displaying belief in the child's worth and his potential and the conveyance of this assurance to him in self-concept, companionship, collaboration, and play.

These goals may at first seem too abstract or too profound for either comprehension or attainment. But our experience indicates that their realization is feasible if instruction and practice are adapted to the age, sex, maturity, and other variables involved.

Aside from the intellectual components much depends on the

affective or dynamic features of the management program. Here we reguire:

1. Understanding leading to
2. Acceptance tempered with
3. Permissiveness but also requiring
4. Self-discipline which is conceived not as mere conformity but as learned standards of personal conduct.

The more academic aspect of the management program includes instruction in all the details of the learning differentials, such as motor coordination, visual, auditory and kinesthetic perception, controlled sensory stimulation, consolidated memory, language development, and other modes of learning which are generally conceived as the responsibility of the teaching profession.

Overall, of course, is the love, faith and confidence of the child's parents and family, and the assured esteem of neighbors, friends, and peers, which anchor those feelings that make life tolerable, if not actually enjoyable. We stand with Virginia Axline * in her touching story of Dibs when she says: "A child needs love and acceptance, not doubts and never-ending testing".

You may well say with Goethe, "Leicht gesagt aber schwer gethan", or less classically, "Nice work if you can get it". But we are not working alone, for we are assured that:

God hath promised
Strength for the day,
Rest for the laborer,
Light for the way,
Grace for the trials,
Help from above,
Unfailing sympathy
Undying love.

Most of us are insecure and need reassurances. Such support is found in the following selection (unidentified), "What God Hath Promised":

God had not promised
Skies always blue,

*Axline, Virginia. Dibs- in search of self. Boston, Mass.: Houghton Mifflin Co., 1964.

Flower-strewn pathways
All our lives through;
God had not promised
Sun without rain,
Joy without sorrow,
Peace without pain.
God hath not promised
We shall not know
Toil and temptation,
Trouble and woe;
He had not told us
We shall not bear
Many a burden,
Many a care.
But God hath promised
Strength for the day,
Rest for the laborer,
Light for the way,
Grace for the trials,
Help from above,
Unfailing sympathy,
Undying love.

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Learning disorders and the preschool child
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LEARNING DISORDERS AND THE PRESCHOOL CHILD

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The interest in children of normal intelligence who cannot learn in a regular school classroom has assumed gargantuan proportions. Much is written in the medical and educational literature on such children, whether they are labelled neurasthenic, brain-injured, dyslexic, neurologically impaired, educationally handicapped, or as having minimal brain dysfunction. The group is heterogeneous, the symptomatology confusing, the pathology obscure, and the etiology elusive. Are these children variants of the "slow learner", emotionally disturbed, neurologically impaired, or simply deviant in maturation? One diagnostic category cannot possibly contain all children with specific learning disability.

It would be unmercifully redundant to enumerate the clinical signs attributed to such youngsters. Essentially, their identifying characteristics appear to include the following: 1) average intelligence; 2) inadequate or defective skills; 3) below average or inconsistent ability in perceptual-motor skills; 4) lack of, or weakly established, cerebral dominance; 5) right-left confusion with problems in laterality and or directionality; 6) fine motor incoordination; 7) non-specific awkwardenss or clumsiness; 8) oculo-motor imbalance; 9) attention defect; 10) disordered or hyperkinetic behavior.

Retrospective study of children rarely yields reliable information. For this group, the medical history may include nothing of predictive or clinical value. It may, however, contain one or more of the following:

A. Pre-Natal and Natal History

1. Spotting, bleeding, or toxemia of pregnancy.
2. Precipitate or prolonged delivery.

B. Neonatal History

1. Jaundice
2. Extreme irritability to the extent that sedation was required.
3. Severe feeding difficulty whereby the infant had a weak suck or inability to suck, requiring assistance with feeding. Excessive spitting or vomiting may be reported.

4. Vaso-motor instability. The infant may have required periodic external heat. Flushing, persistant rubor, pallor or excessive sweating may be reported.

C. Post-Natal History

1. Environmental instability or disruption with excessive geographical mobility during the first three years of the child's life.

2. Slow development of speech and/or prolonged retention of infantile speech patterns.

3. History of delayed development of laterality.

Among the characteristics which observant classroom teachers may report are:

1. Poor visual perception and memory for words.

2. Poor auditory memory for words or for individual sounds in words.

3. Persistent reversals of words, syllables or letters in reading, writing and speech. Rotation or inversion of letters; reversed sequence of letters and syllables; mirror-writing, or transposition of numbers.

4. Poor recall for reproduction of simple geometric forms.

5. Poor memory for auditory or visual sequence.

6. Weakly established handedness.

7. Clumsiness and poor hand control.

8. Immature articulation.

9. Hyperactivity and distractibility.

Any number of conditions, organic, environmental or intra-psychic may affect the way the child perceives sensory information; the result can be seen in his behavior but we must learn to recognize any disorganization (or dis-integration) before the child is of school age and fails to perform tasks that depend on perceptual-motor or behavioral organization which should have taken form earlier in development.

Most of these children are not referred for diagnostic evaluation until they have failed to learn for several years. Thus, the specific symptomatology may well have become cluttered and camouflaged by the addition of many variables, including the particular behaviors chosen by the child to cope with his ever-increasing burden of failure. So many factors such as variations in maturation schedules, variable environmental and inter-personal influences and a myriad of unpredictable internal and external

events can affect favorably or unfavorably the developmental course of the growing organism. The ten year old John Doe described by his fourth grade teacher may not even seem related to the same child as described at age five years by his kindergarten teacher. In fact, the language used by teachers of fourth through sixth grades in relation to the child as a learner is quite different from that of the primary teacher. They are concerned with entirely different functions of organisms in quite different stages of growth and development.

We have yet to learn to identify the pre-school child with specific learning disability. The child with marked immaturity in perceptual-motor skills or with atypical developmental patterns continues to be sent to first grade with the silent assumption that "he'll probably grow out of it." In this regard, it is significant that descriptions of the immature first grade child and many of the older children diagnosed as having minimal brain dysfunction are remarkably similar. Further, the teaching methods for "brain-injured" children recommended by William Cruickshank et al., have been found to apply as well to the immature child.

Our primary focus of attention should be on school readiness rather than school failure, although certainly the latter is of grave concern. It is estimated by Hale Shirley, that 15% of children reaching school age are not yet ready for reading instruction because of immaturity. Ilg and Ames found that approximately 50% of children in an upper middle class community were "over placed." They state that "possibly the greatest single contribution which can be made toward guaranteeing that each individual child will get the most possible out of his school experience, is to make certain that he starts that school experience at what is, for him, the 'right' time." This should be when the child is sufficiently mature to embark on his academic career, not a time arbitrarily decided upon by external forces, such as school law or custom.

The criterion for first grade entrance in the United States is associated with chronological age. This varies from the child being permitted to enter first grade if he reaches the age of six years by September 1, to his being permitted to enter the first grade if he reaches the age of six years by the following January 31.

Reading readiness tests, such as the Lee Clark Readiness Test and the Metropolitan Readiness Test, have been devised to assist

the schools in selecting the students. School entrance also has been determined in some communities by the child's IQ rating, due to the belief that a child's higher intelligence would insure his ability to succeed.

However, neither intelligence nor readiness tests have provided a reliable evaluation of the child's true potential or educational prognosis. "Readiness" has been a controversial subject in education and is rarely discussed in pediatrics. It has been viewed on the one hand as an intrinsic state of the organism, and on the other hand, as the result of stimulation and teaching. Actually, these two view points are not mutually exclusive. Hebb, Piaget, Hunt, Koffka, and others interpret maturation as being contingent on function which in turn is fostered by expericnce and training. Katrina de Hirsch points out that "maturation unfolds in continuous interaction with stimulation," and states that it is desirable to match teaching methods to the child's specific developmental needs— this is what Hunt terms "the problem of the match." It is incumbent on us in medicine, education and psychology, then, to provide diagnostic information that will define the child's developmental needs. It should be possible for us to send a child to school with a good deal of information, perhaps speculation, about how that child goes about learning and about his "ripeness" for particular kinds of tasks. We should be able to locate his position on a maturational scale.

The term "immature" is frequently used by kindergarten teachers in describing children whom they judge not to be ready for first grade entrance at the age of six years. It is not always clear whether the term is used in reference to physical immaturity, behavioral immaturity, or intellectual subnormality. It seems to be used, however, synonymously with "un-readiness."

Record inspection of 817 consecutive new patients referred because of suspected mental retardation to the Child Study Center, University of Oklahoma Medical Center, revealed the following facts: 112 (13.6%) were found to have dyslexia, or specific reading disability; the mean IQ for the dyslexic group was 109; the majority of these children were not referred for evaluation until they were in the third of fourth grade; many had repeated one year of school; and some of them were considered behavior problems in both home and school settings at the time of referral. Of particular importance, 98% of these dyslexic children

had been called "immature" by their kindergarten teachers. Evidently, their parents and teachers had assumed that these children would "outgrow" their difficulty as a natural function of maturation.

The erroneous but somewhat popular concept that many immature six year olds will catch up with their peers during the first two or three years of schooling, was not supported by inspection of these clinic records. Quite to the contrary, since almost 14% of the clinic sample were found to be dyslexic.

Twelve kindergarten and first grade teachers were asked to list what they believed to be the major characteristics of the "immature" child's behavior. In reviewing their descriptions, the most outstanding behavioral characteristics of the "immature" six year old appeared to be inadequate language skills, immature motor performance, and insufficient attention span. His behavior was described most frequently as disorderly and disorganized, rather than hyperkinetic. His vocal and motor output was thought to be excessive and without syntactical or contextual structure. Teachers reported that this child tends to speak and act without thinking and, when compared with normal peers, the "immature" child requires much more auditory, visual, tactile and kinesthetic reinforcement. He is described as clumsy, and "closer to the ground", clinging, and overly dependent on the teacher. In general, he seems to lag behind his mature classmates in terms of performance in school activity, physical appearance, social and emotional interactions, and learning ability.

A study (soon to be published) was carried out to examine the validity of the behavioral descriptions of immaturity as representative of objective, measurable differences along several dimensions: physical differences, social and emotional maturity differences and psycholinguistic differences. The subjects were 46 first grade children judged to be immature by their kindergarten teachers. These youngsters were from a high socioeconomic area, all with birthweight over 5 lb., normal auditory and visual acuity, normal neuromotor functions, and normal speech mechanisms. These were matched on the bases of age (±3 months), race, sex, socioeconomic level, and intelligence with an equal number of mature six year olds. The following tests were administered: medical examination, Templin-Darley Articulation Test, the Vineland Social Maturity Scale, the WISC, the Bender Visual-

Motor Gestalt Test, Goodenough Draw-A-Person Test, Knox Cube Test, Vocabulary and Work-naming Subtests of the Stanford-Binet-Form L, Woods, Judgment of Relations test, and the ITPA. The Lee-Clark Reading Readiness and the Metropolitan Achievement Tests were administered, the former at the beginning of the school year, and the latter at the end of the school year.

Although it is not possible at this time to review the findings of this study in detail, a few observations may be pertinent. All of the immatures selected by the teachers were of normal intelligence. The three examing physicians (pediatricians) reported that the immatures as a group showed a non-specific clumsiness and awkwardness in motor function when compared to the matures as a group. Twenty-four percent of the immatures and 3% of the matures demonstrated marked fine-motor incoordination; 11% of the immatures and none of the matures demonstrated isolated hyperactive deep tendon reflexes on physical examination. There were no significant differences between the number of children in the two groups who demonstrated "crossed dominance." No statistically significant differences were found in the prenatal and birth histories. (Premature children were excluded from the study.) Abnormal neonatal conditions such as hypoxia, weakness of suck, marked irritability, hypotonia, vaso-motor instability, or seizures were equivalent statistically in both groups. The past history of disease did not differentiate the immatures from their matched controls, nor did the family history of disease. The two groups showed no significant differences in reaching the developmental motor milestones, in speech development, or in the establishment of handedness. The incidence of left-handedness was similar in both groups.

The most outstanding differences between the two groups were found on the Vineland Social Maturity Scale, where 30% of the immatures and only 2% of the matures deviated one or more standard deviations below Doll's mean, and on the visual-motor sequencing subtest of the IPTA, in which the matures were superior to the immatures. Also, on the ITPA, when the children were matched on the basis of the WISC Performance IQ, the matures were superior on the auditory decoding, auditory-vocal association, and auditory-vocal automatic subtests, and on the total ITPA scores. Again, when matched on WISC Performance IQ, the matures were superior to the immatures on the Picture

Arrangement subtest of the WISC. The mature children also did better than the immatures on the Wood Judgment of Relations Test, on the Bender Visual-Motor Gestalt Test, and on the Word and Letter Identification subtest of the Lee-Clark Reading Readiness Test.

Of particular significance to us here, on a follow-up study three years later, thirteen of the immature children were found to be dyslexic and only one of the mature children. (This follow-up study is also to be published soon.)

All of this may not be remarkably enlightening. However, there is some confirmation of the notion that children with learning disability are most likely to have been considered immature when they were five years old. Evidence can also be found that their most common difficulty is in the area of sequential operations in the auditory and or visual modality.

Be that as it may, our point here is that the time to look for children with what we call learning disability is at age five or earlier, not to wait until ages seven to ten. We can identify "high risk" children and they should be given top priority on our list of educational concerns.

There appears to be ample evidence to indicate a definite correlation between developmental perceptual-motor disturbance and specific learning disability. Certainly if a child is unable to establish the basic motor patterns, resulting disorders of postural mechanisms, failure to establish laterality and directionality, or impaired body image, can cause perceptual development to progress in an atypical or distorted manner. Whether we are dealing with an immature central nervous system or one which is impaired or deviant, as stated earlier, each community should be able to provide comprehensive evaluation of every child before he enters kindergarten, in order to determine his state of perceptual organization or "ripeness." Ideally, multi-professional groups should be available to evaluate every child during the preschool period to determine his particular learning style and to transmit this information to the school in useful form.

When a child of grossly normal intelligence does not communicate verbally by three or three-and-one-half years of age, uses both hands without preference, is clumsy in walking and eating, unpredictable in reactions, when he presents a history of any of the abnormal newborn signs discussed earlier, or when he

appears to be a "high risk" educationally for any reason, he could be admitted to an evaluation preschool for a period of diagnostic therapy. In such a setting, he can receive training in the motor bases of behavior, such as posture and the development of laterality and directionality; training in perceptual skills, such as form perception, space discrimination, stereognosis, recognition of texture, size and structure; training in visual perception, auditory perception and kinesthetic perception. Such experience and training would be beneficial whether the child's problems are due to a maturational lag, developmental deviation, or neurological impairment. If the first, improvement in the direction of school readiness would be relatively rapid and steady; if the latter, the signs will become more apparent in a diagnostic classroom. A continuing period of such training will also help to separate the children whose faulty developmental patterns are secondary to socio-psychological variations. In every case, it would be possible to determine the child's assets as well as his liabilities.

Diagnostic teaching should be continued through the primary grades and in every case where a child demonstrates atypical approach to learning, there should be an adjustment in the way the pupil is taught. Kindergarten and primary teachers must be trained to utilize multi-sensorial techniques, to provide perceptual-motor training in the classroom, and to search continuously for methods of instruction that will fill a child's needs rather than search for ways to make the child fit a particular method or curriculum.

As early as the latter half of the 19th Century, Charcot pointed out that people fall into three different categories with regard to learning: the visile, audile and motile types. Most of us, as adults, recognize that we learn in different ways; some learn best by eye, some by ear, and some need to perform a motor activity in connection with the learning situation, such as taking notes in a classroom situation. One often hears adults talking about their particular idisyncracies in this regard: "I have to see it in order to remember it" or "Let me write it down so I won't forget it," etc. Yet we have persisted in teaching children in the primary grades via one particular sensory modality, whether it be by eye or by ear, and we have assumed that tactile and kinesthetic reinforcement is not necessary for children over six years of age.

We have discussed, but have failed to recognize in practice, the individual differences that do exist among children.

Teachers must receive appropriate training as well as every assistance from consulting psychologists and physicians; school programs of instruction must be flexible enough to permit a continuing search for new teaching methods; and the administrative leadership in the schools must not only allow but encourage experimentation, both with identification procedures and with adjustable methods of experimentation.

In every community, pediatricians, nursery school teachers, kindergarten teachers and parents, can cooperate in attaining preschool evaluation of children, at least in order to screen the "high risk" youngsters, those who do not appear to be ready for first grade. Such evaluation can continue through kindergarten and the primary grades. A flexible ungraded primary from kindergarten through third grade, if honestly administered in principle and practice, could be one solution to this "problem of the match," or, as deHirsch has suggested, and as is practiced in Sweden, a "transition class" could be made availabe to those children who need it between first and second grades. Parenthetically, the Swedes consider the age of school readiness to be anywhere from four to eight years.

A system that insists upon all children beginning school at the age of six years should also insist that attendance be profitable to each child, and therefore to society. In his excellent book,"Prescriptive Teaching", Laurence Peter states: "Insisting upon attendance of children who fail to learn, and who eventually learn that they are incompetent, is insisting on crippling or handicapping children or insisting on mental or physical illness, delinquency, economic dependency, and probably another generation of parental ineptitude." If we demand that all children must go to school, then we must provide appropriate education for every child, and we must also accept, in fact as well as in theory, the concept of individual differences. As physicians and educators, we must learn how to identify these individual differences in learning in our children during the preschool period.

Symposium 1968
will be concerned with
"The Child as an Integrating Organism"
May 28, 1968

Speakers:
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George Peabody College for Teachers
Miss Doris Johnson
Northwestern University